

EPR of Mn^{2+} in Kagome Staircase Compound $\text{Mg}_{2.97}\text{Mn}_{0.03}\text{V}_2\text{O}_8$

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The electron paramagnetic resonance and magnetic susceptibility of Mn^{2+} in geometrically frustrated $\text{Mg}_{2.97}\text{Mn}_{0.03}\text{V}_2\text{O}_8$ single crystals have reported. The studied crystals have orthorhombic symmetry and are isostructural with known kagome system $\text{Ni}_3\text{V}_2\text{O}_8$ and $\text{Co}_3\text{V}_2\text{O}_8$. The EPR spectrum shows two groups of thirty resonance lines associated with two crystallographically nonequivalent Mn ions positions that are known in the kagome staircase system as "cross-tie" and "spine" sites. Additionally, a strongly anisotropic resonance lines from different Mn^{2+} - Mn^{2+} pairs have observed. The values of the crystal field parameters have obtained from the spectra and the signs of the parameters were determined from the temperature dependence of the intensities of the peaks. The local symmetry of magnetic ions, main values of the hyperfine structure have determined for both manganese positions.

9.7 cm

13.4 cm

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